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May 3, 2011

Document Control Desk
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852-2746

RE: Southeastern Drainage/North Fork Box Creek - Surface Water and Groundwater Monitoring Results
Docket No. 40-8102
License No. SUA-1139
Highland Reclamation Project

Dear Dr. McLaughlin:

As requested, attached are the results from surface water quality monitoring in North Fork Box Creek (Table 1) and groundwater quality monitoring in wells near or in the Southeast Drainage near the ExxonMobil Highland tailings impoundment (Table 2). The data presented are for the period of monitoring since the installation of each well or monitoring station. Surface water quality monitoring stations "Box Creek 2" and "Box Creek 5" did not have water during August 2009 and August 2010, and therefore there are no results reported for those locations and dates. These data are also provided electronically on a disk which is attached to the forthcoming license amendment application, for your review. The license amendment application includes a thorough evaluation of the data, which is not repeated here.

If there are any questions or comments regarding the monitoring results, please contact me at (970) 461-5054 or Mahesh Vidyasagar with ExxonMobil at (281) 654-8458.

Sincerely,

A handwritten signature in black ink, appearing to read "Rebecca J. Bilodeau", written over a large, horizontal, oval-shaped scribble.

Rebecca J. Bilodeau
Project Manager

cc: Thomas McLaughlin, NRC
Mahesh Vidyasagar, ExxonMobil
Bruce Wielinga, AMEC

A small, hand-drawn square box containing a stylized, blocky letter, possibly an "A" or "E".
FSME20

Table 1. Water Quality Monitoring Results for North Fork Box Creek Monitoring Locations

5/3/2011

Well Number	Date	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Selenium (mg/L)	Uranium (mg/L)	Alkalinity, Bicarbonate (mg/L as CaCO ₃)	Alkalinity, Carbonate (mg/L as CaCO ₃)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Gross Alpha-Rn222 & U (pCi/L)	Radium 226 (Ra226) (pCi/L)	Radium 228 (Ra228) (pCi/L)	Thorium 230 (Th230) (pCi/L)	Cond - Field (umhos/cm)	pH - Field (s.u.)	Temp - Field (degC)
Box Creek 1	8/19/2008	43.5	37	11.2	199	<0.0003	0.0097	11.4	51.4	8.1	681	976	0.8 +/- 0.4	0.44 +/- 0.21	1.3 +/- 0.79	0.2 +/- 0.2	1418	10.18	23.1
Box Creek 2	8/19/2008	39.9	31	16.7	179	0.00052	0.0324	468	<0.46	23.1	141	772	1.1 +/- 0.5	0.5 +/- 0.18	1.3 +/- 0.81	0.2 +/- 0.3	1174	7.83	23.7
Box Creek 3	8/19/2008	29.7	40.3	13.4	420	0.00032	0.05	390	62.1	37.1	678	1470	1.8 +/- 0.6	0.23 +/- 0.15	1.3 +/- 0.83	0.2 +/- 0.2	2.08	8.83	22.9
Box Creek 4	8/19/2008	157	101	9.68	367	<0.0003	0.004	176	<0.46	98.8	1380	2170	1.2 +/- 0.5	0.2 +/- 0.11	1.3 +/- 0.77	0.2 +/- 0.1	2.68	7.39	22.7
Box Creek 5	8/19/2008	31.3	19.2	6.67	146	<0.0003	0.0044	260	<0.46	8	263	604	1 +/- 0.5	0.22 +/- 0.13	1.3 +/- 0.78	0.2 +/- 0.07	920	7.67	22.3
Box Creek 6	8/19/2008	51.8	30	8.74	163	<0.0003	0.0053	242	6.4	31.6	376	792	1.4 +/- 0.5	0.21 +/- 0.12	1.3 +/- 0.79	0.2 +/- 0.08	1155	8.27	23.7
Box Creek 1	5/27/2009	79.1	61.5	7.48	342	<0.00099	0.0367	60.3	26.1	11.2	1080	1550	1.1 +/- 0.7	0.05 +/- 0.13	0.54 +/- 0.75	0.07 +/- 0.1	2090	9.05	20.4
Box Creek 2	5/27/2009	270	62.6	9.94	353	<0.00099	0.0735	391	<0.46	86.2	1130	2150	0.6 +/- 0.6	0.5 +/- 0.18	2.1 +/- 0.78	0.1 +/- 0.3	2730	7.5	23.3
Box Creek 3	5/27/2009	72.7	48.5	3.72	345	<0.00099	0.036	260	16	24.2	824	1340	0.6 +/- 0.6	-0.09 +/- 0.1	0.06 +/- 0.68	0.02 +/- 0.1	1922	8.5	20.1
Box Creek 4	5/27/2009	132	62.1	4.74	303	<0.00099	0.0251	269	<0.46	44.1	905	1540	1.1 +/- 0.5	-0.07 +/- 0.1	0.36 +/- 0.7	-0.06 +/- 0.2	2070	7.51	20
Box Creek 5	5/27/2009	221	88.5	6.4	328	<0.00099	0.0288	281	<0.46	81.8	1180	2130	0.8 +/- 0.6	0.03 +/- 0.16	0.16 +/- 0.95	0.3 +/- 0.3	2650	8.05	25
Box Creek 6	5/27/2009	66.3	36.3	5.91	215	<0.00099	0.0163	255	8.6	36.4	442	927	0.9 +/- 0.6	-0.2 +/- 0.08	0.47 +/- 0.74	-0.3 +/- 0.6	1382	8.38	21
Box Creek 1	8/17/2009	86	77	12.4	430	<0.00099	0.0188	30.4	36.9	18.9	1220	2030	0.4 +/- 0.4	-0.05 +/- 0.1	1.1 +/- 0.93	0.04 +/- 0.1	2780	9.57	20.2
Box Creek 3	8/17/2009	19.4	45.8	15.1	376	<0.00099	0.0241	293	99.5	64.2	702	1440	1 +/- 0.5	0.03 +/- 0.12	2.4 +/- 1	0.02 +/- 0.1	2140	9.13	21.2
Box Creek 4	8/17/2009	128	75.9	5.64	265	<0.00099	0.0074	149	<0.46	82.6	1110	1630	0.2 +/- 0.3	-0.01 +/- 0.11	2.9 +/- 1	0.03 +/- 0.09	2230	7.95	19.6
Box Creek 6	8/17/2009	48.2	42.6	7.39	226	<0.00099	0.0061	262	2.2	44.1	444	1040	0.3 +/- 0.4	-0.07 +/- 0.1	2.4 +/- 0.97	-0.01 +/- 0.05	1589	8.17	22.4
Box Creek 1	5/25/2010	158	82.9	9.42	374	<0.00099	0.0301	166	5.4	15.7	1360	2140	0.3 +/- 0.3	-0.02 +/- 0.08	0.44 +/- 0.64	0 +/- 0.09	4130	8.08	14.3
Box Creek 2	5/25/2010	133	43.1	3.49	228	<0.00099	0.0886	451	<0.46	11.9	554	1250	0.7 +/- 0.4	0.35 +/- 0.14	0.85 +/- 0.66	0.08 +/- 0.1	1747	7.58	17.1
Box Creek 3	5/25/2010	127	54.4	4.79	327	<0.00099	0.0676	413	3.7	83.8	769	1530	0.5 +/- 0.3	0.09 +/- 0.1	1.7 +/- 0.7	0.09 +/- 0.1	2110	8.22	17.7
Box Creek 4	5/25/2010	139	60.3	4.81	307	<0.00099	0.0627	387	<0.46	31.8	770	1560	0.3 +/- 0.3	0.06 +/- 0.09	0.53 +/- 0.65	-0.02 +/- 0.08	2130	8.08	19.4
Box Creek 5	5/25/2010	195	80.6	5.46	293	<0.00099	0.0478	347	<0.46	126	1010	1850	0.2 +/- 0.3	-0.01 +/- 0.08	0.34 +/- 0.65	-0.01 +/- 0.07	2330	7.85	19.3
Box Creek 6	5/25/2010	64.3	37	5.68	194	<0.00099	0.0119	278	<0.46	40.1	419	923	0.3 +/- 0.3	-0.04 +/- 0.07	0.67 +/- 0.63	0.08 +/- 0.1	1359	8.2	15.7
Box Creek 1	8/10/2010	179	119	16	653	<0.00025	0.006	76	9.9	26.8	2070	3150	0.7 +/- 0.5	0.15 +/- 0.13	0.39 +/- 0.65	0.1 +/- 1.2	3920	7.11	22.3
Box Creek 3	8/10/2010	19.4	49.2	17	425	0.00032	0.0197	244	117	44.5	725	1620	2 +/- 0.7	0.02 +/- 0.11	0.28 +/- 0.64	0.1 +/- 0.1	2250	9.37	22.6
Box Creek 4	8/10/2010	145	92.3	9.43	360	<0.00025	0.0046	105	<0.46	80.2	1280	2110	0.8 +/- 0.5	0.08 +/- 0.12	0.23 +/- 0.68	-0.01 +/- 0.05	2630	7.9	21.3
Box Creek 6	8/10/2010	45.3	39.5	7.17	229	<0.00025	0.0051	270	5.6	42.6	430	998	1.3 +/- 0.6	-0.06 +/- 0.09	1 +/- 0.66	0.01 +/- 0.1	1466	8.2	22.5

Table 2. Water Quality Monitoring Results for Wells Located Near or in the Southeast Drainage to North Fork Box Creek

5/3/2011

Well Number	Date	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chromium (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Uranium (mg/L)	U-234 (pCi/L)	U-238 (pCi/L)	Alkalinity, Bicarbonate (mg/l as CaCO3)	Alkalinity, Carbonate (mg/L as CaCO3)	Chloride (mg/L)	(NO2 + NO3)-N (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Gross Alpha-Rn222 & U (pCi/L)	Radium 226 (pCi/L)	Radium 228 (pCi/L)	Thorium 230 (pCi/L)	Cond -Field (umhos/cm)	pH -Field (s.u.)	Temp -Field (degC)
TT-7	8/17/2009	<0.00095	<0.0002	340	<0.0006		<0.00005	84.8		0.0013	7.14	<0.00099	120	0.0463			299	<0.46	73.6	<0.04	1000	1810	2.8 +/- 1	0.16 +/- 0.14	0.83 +/- 0.72	0.1 +/- 0.09	2160	6.93	11.3
TT-7	11/19/2009	<0.00095	<0.0002	292	<0.0006		0.0003	75.6		0.0014	6.09	0.00099	110	0.0405			284	<0.46	72.7	<0.04	991	1700	1 +/- 0.6	0.2 +/- 0.1	1 +/- 0.88	0.004 +/- 0.07	2110	7.11	12.8
TT-7	3/16/2010	<0.00095	<0.0002	273	<0.0006	<0.0522	0.0011	70.7	0.005	0.0047	5.22	0.0019	102	0.0402			268	<0.46	54.5	<0.04	841	1630	2 +/- 0.6	0.19 +/- 0.13	1.2 +/- 0.83	0.02 +/- 0.06	1988	7.07	12.0
TT-7	5/25/2010	<0.00095	<0.0002	286	<0.0006		0.00039	71.4		0.0026	5.48	0.0019	107	0.0518			269	<0.46	62.4	<0.04	1020	1630	0.7 +/- 0.4	0.09 +/- 0.11	0.3 +/- 0.61	0.04 +/- 0.09	2020	7.07	11.3
TT-7	8/11/2010	<0.00095	<0.0002	300	<0.0006		0.00025	70.3		0.0017	5.89	<0.00025	109	0.0483			284	<0.46	53.5	<0.04	770	1630	0.4 +/- 0.4	0.08 +/- 0.12	0.94 +/- 0.66	0.06 +/- 0.06	1864	6.66	14.0
TT-7	10/22/2010	<0.00095	<0.0002	279	0.001		0.000063	71.3		0.0051	6.26	0.0007	118	0.0495			288	<0.46	53.4	<0.04	780	1710	0.7 +/- 0.5	0.39 +/- 0.14	0.54 +/- 0.57	0.03 +/- 0.07	2050	7.10	15.0
TT-8	2/16/2009	0.0017	<0.00021	643	<0.00068		0.00024	172		0.0262	8.52	0.004	194	0.117			577	<0.46	267	<0.4	1760	3620	2.2 +/- 0.6	0.73 +/- 0.17	3.3 +/- 1	-0.01 +/- 0.04	4020	6.66	12.0
TT-8	5/28/2009	0.0013	<0.0002	663	<0.0006		0.00006	164		0.0235	8.48	0.0019	201	0.114			587	<0.46	259	0.41	1920	3720	1.3 +/- 0.4	0.58 +/- 0.17	2.3 +/- 0.71	0.01 +/- 0.1	4070	6.73	12.3
TT-8	8/20/2009	0.0012	<0.0002	630	<0.0006		0.00013	171		0.0273	8.41	0.0021	192	0.116	48.3 +/- 4.8	33 +/- 3.5	578	<0.46	382	0.36	1810	3620	1.1 +/- 0.6	0.28 +/- 0.11	2.5 +/- 0.84	-0.006 +/- 0.08	4030	6.71	11.2
TT-8	11/19/2009	0.0013	<0.0002	632	<0.0006		0.00012	170		0.028	8.27	0.0022	193	0.127			577	<0.46	258	0.36	1950	3560	1 +/- 0.6	0.6 +/- 0.15	3.2 +/- 0.92	0.05 +/- 0.07	3990	6.72	11.8
TT-8	3/15/2010	0.0015	<0.0002	626	<0.0006	0.96	0.00019	169	0.0785	0.0277	8.31	0.0017	194	0.113			577	<0.46	242	0.28	1770	3380	2.6 +/- 0.6	0.51 +/- 0.19	3.3 +/- 1	0.03 +/- 0.1	3870	6.65	11.6
TT-8	5/18/2010	0.0014	<0.0002	599	<0.0006		0.00019	164		0.0283	7.91	0.0018	193	0.117			565	<0.46	228	0.15	1590	3520	0.6 +/- 0.4	0.25 +/- 0.13	3 +/- 0.8	-0.02 +/- 0.07	3920	6.76	12.6
TT-8	8/11/2010	0.0016	<0.0002	653	<0.0006		0.00019	156		0.0279	7.69	0.0017	185	0.117			563	<0.46	230	0.19	1590	3430	0.7 +/- 0.5	0.38 +/- 0.15	2.1 +/- 0.67	-0.02 +/- 0.07	3830	6.75	12.3
TT-8	10/22/2010	0.0016	<0.0002	596	<0.0006		0.00024	152		0.0292	7.6	0.0017	187	0.118			546	<0.46	217	0.12	1470	3500	-0.8 +/- 0.9	0.44 +/- 0.17	3.5 +/- 0.67	0.04 +/- 0.09	3790	6.78	12.0